



- There are many factors which contribute in compromising patient's safety, one of them are medication errors (others include: surgical errors, diagnostic errors... etc).

- **What is a medication error?**

- It is a failure in the treatment process (drug) that leads to, or has the potential to lead to harm to the patient and includes an act of omission ارتكاب or commission خطأ
- ✓ Omission = there is something missing = e.g. you as prescriber were supposed to do something but you did not.
- ✓ Commission = components of prescription are there but there is something wrong = e.g. prescribing the wrong dose of a drug.
- **Another definition for a medication error:** any error in prescribing, dispensing or in the administration of a drug irrespective of whether such errors will lead to adverse effects or not.

- **Types of medication errors:**

- **Prescribing (وصف الدواء):** mistake is done by the prescriber (usually a physician → but not necessarily → it could be a nurse).
- **Dispensing (تركيب الدواء):** mistake is done by the pharmacists (الصيدلاني).
- **Drug administration (اعطاء الدواء):** mistake can be done by nurses or physicians (in hospital setting), patient themselves or care-givers (at home).

- **Medication errors in United States (2006):**

- **Common errors include the following:**
  - ✓ Wrong dose- an act of commission (41%): it is the most common type of medication error.
  - ✓ Wrong drug- integration error (16%).
  - ✓ Wrong route of administration (16%).
- **Notice that of all medication errors, 1.5%-2% are serious (resulting in irreversible injuries or even death!!).**
- Of all medication errors, some of them only will result in adverse drug events (these events might be preventable or not).

- **Prescribing errors:**

- **Classified as:**

<b>Omission errors</b>	Example: when writing a prescription, you forget to write a warning or another specific key element of a prescription (there is something missing)
<b>Commission errors</b>	Prescription elements are there but one or more of them might be wrong.
<b>Integration errors</b>	e.g. this is represented by prescribing a wrong drug or drugs which can interact with each other. Example: a patient is presenting to you with mild-moderate hypertension → you prescribe a $\beta$ -blocker for him (but the patient is asthmatic!) → the patient will develop an attack of asthma because you were unable to integrate the relation between the drug you prescribed and the patient's condition.

- **Other factors which might contribute to prescribing errors:**
  - ✓ Illegible handwriting.
  - ✓ Inaccurate medication history taking.
  - ✓ Confusion with the drug name.
  - ✓ Inappropriate use of a decimal point (0.1) or a trailing zero (1.0).
  - ✓ Use of confusing abbreviations (اختصارات).
  - ✓ Use of verbal orders.



- **What are the recommendations for minimizing prescribing errors:**
  - ✓ Changes to clinical working environment (there is increased working time → resulting in more stress → that leads to more mistakes).
  - ✓ Undergraduate education reforms الإصلاح والتقويم
  - ✓ Postgraduate education reforms.
  - ✓ Continuing professional education.
  - ✓ Standard treatment guidelines.
  - ✓ Therapeutic audits التدقيق
  - ✓ Safety culture and awareness.

- **Dispensing errors: due to:**

- **Transcribing errors** (e.g. not understanding what has been written by the prescriber).
- **Similarity between drug names** (example: codeine and lodeine).

Approaches to minimize these errors:

- ✓ Computerized system.
- ✓ Essential drugs program (e.g. WHO list of drugs program).
- ✓ Using the generic name in prescribing the drug (because there are many brand names!).
- ✓ Optimizing the workload of dispensing pharmacists.
- ✓ Quality management.

- **Drug administration errors:**

- **Highest risk in nursing practice.**
- **Rule of 5:**
  - ✓ Right drug.
  - ✓ Right dose.
  - ✓ Right patient.
  - ✓ Right route (IV route of administration is more prone to errors).
  - ✓ Right time.
- Availability of drugs in different strength or in combinations with other drugs.

Approaches to minimize these errors:

- ✓ Check patient's identity.
- ✓ Ensure correct dosage calculation.
- ✓ Ensure that the prescription, the drug and the patient are in the same place.
- ✓ Minimizing interruptions during drug rounds.

- **Highly vulnerable populations for medication errors:**

- **Elderly (why?):**
  - ✓ Age-related changes in organ function.
  - ✓ Decreased cognitive function.
  - ✓ Polypharmacy (due to age-related health problems).
- **Infants and children:**
  - ✓ Due to immaturation of organ function (therefore, specific dose calculations are used when prescribing drugs to them).
- **Accident and emergency setting** (due to increased stress which results in more mistakes).
- **HIV-infected patients.**